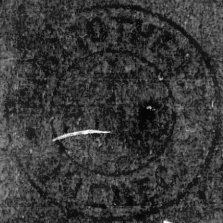


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CULTIVATION OF FLAX.  
PRACTICAL HINTS  
ON THE  
CULTIVATION AND TREATMENT  
OF  
THE FLAX PLANT.



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DESIGNED FOR THE USE AND BENEFIT OF  
THE CANADIAN FARMER.

W. DONALDSON,

PRINTED BY THE CANADIAN FARMER, 44 & 45 KING ST. EAST.

TORONTO.

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EXPRESSLY FOR THE USE AND BENEFIT OF  
THE CANADIAN FARMER.

BY J. A. DONALDSON,  
GOVERNMENT EMIGRATION AGENT, TORONTO.

TORONTO:

PRINTED AT THE "GLOBE" STEAM PRESS, 26 & 28 KING ST. EAST.

1865.

## CUltIVATION OF FLAX.

THE importance of the cultivation of this valuable plant in Canada has of late years occupied a large share of my attention, more especially since the failure of the *Wheat* crop, which has unfortunately become so general. It will be acknowledged by all that agriculture and home commerce are the pillars of national prosperity; and when success attends the plough, the labourer and the artisan are employed. In proportion as agriculture is depressed, all the dependent branches of trade suffer; and Canada being entirely an agricultural country, and labouring at present under great depression, universally acknowledged to be from the general failure of the wheat crop, it behooves not only the farmer, but every member of the community to apply himself and see if some remedy cannot be found, that may in some measure meet this serious evil. The farmer is recommended to try many other descriptions of crops. Among these, hemp and tobacco present themselves. Both no doubt can be cultivated to great advantage, but has already been introduced to a very considerable extent, and for the benefit of those who may not have given this valuable crop a share of their attention, it may be as well to state, as an inducement to others to follow the example, that not less than from eight to ten thousand acres were devoted to this crop in Upper Canada last year, and a number of enterprising parties have embarked not only in its cultivation, but in manufacturing the raw material into manufactured goods fit for consumption in our own country.

The Messrs. Parine Bros. & Co. of Moon, whose operations extend nearly throughout the County of Waterloo, distributed

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The Messrs. Perine Bros. & Co., of Doon, whose operations extend nearly throughout the County of Waterloo, distributed

seed to the farmers for sowing to the extent of nearly three thousand acres last year. Col. Mitchell, of Norval, County of Halton, also furnished seed to a large number of farmers in his neighbourhood. Parties desirous of going into the cultivation or manufacture of this product, would do well to visit one or other of these establishments. At St. Mary's, St. Thomas, Elora, Stratford, London, Woodstock, Goderich, Weston, Whitby, Uxbridge, Cobourg, Belleville, Kingston, Brockville, Mirrickville, Newcastle, Matilda, and many other places, a good beginning has been made. Linen manufactories are also springing up. This branch of enterprise is certainly the greatest boon of all to this country, converting as it does, the raw material into manufactured goods of a description so much in common use in Canada, such as linen for bagging, brown holland, drills, toweling, bed ticking, shoe threads, saddlers' threads, wrapping twine, and cordage of every description. All these articles have hitherto been largely imported, and we have been paying upon them a duty of twenty per cent.

Cottonizing the fibre is also engaging the attention of the skilful artisan. This process may be seen at the Doon Mills. A two-fold benefit will arise from the production of this new class of goods. First, it will take the place of cotton batting, which, like all articles of that class, is at war prices. Secondly, the farmer will be relieved of the most objectionable part of the labour which attends flax,—that of pulling, as it can be cottonized when taken from the field in any shape, without regard to its being made into sheaves, as is required if used for scutching, and producing a fibre fit for spinning into yarn.

While endeavouring as briefly as possible to point out the most economical and profitable mode of cultivation and after treatment of the flax crop, it is necessary to caution parties intending to give the new product a fair trial, not to expect too much at least for the first year. In order to success, the directions about to be given must be carefully observed. If they cannot in all cases be followed to the letter, beginners should keep as near them as possible. At the same time, there can be little doubt that experience from year to year will enable



the farmer to make many improvements on the rules herein laid down. This has been the case in all flax growing countries, and Canada will hardly prove an exception.

I will now proceed to point out the description of soil best calculated for a crop of flax. All parties that have written on this subject are of opinion that a good clay subsoil, with a friable deep loam, is the best for this plant; but I have seen it grown in Ireland on almost every description of land. My belief is that in every county in Canada there are large tracts well adapted for flax. All the valleys along the rivers are admirably suited to its growth. Mr. Beck of Baden, County of Waterloo, where a scutching mill has long been established, sowed flax three successive years on a piece of rich flats near his mill, and the crop produced the last year was the best of the three. In order however to succeed in getting a good crop on any land, parties must not imagine for a moment that they can dispense with careful attention and thorough cultivation. The land should be well ploughed in the fall, twice if necessary, taking care in every case to pick off all the weeds or roots that may in any way obstruct the growth of the plant. After a preparation of this kind, when the land is in good tilth, many prefer sowing on the winter face, but at any rate a light ploughing will answer in the spring, or the application of the cultivator. Before sowing you require to harrow well with a heavy harrow; next the surface should be rolled; then pass a light harrow on the land; and lastly roll again. Let the ridges be as wide as possible, with as few furrows as can be made, since the flax is likely to be of unequal lengths when there are many furrows. With regard to the time for sowing, about the tenth of May is the best time ordinarily, but this is a point to be determined by the season and the state the land is in. Weeds are among the worst enemies we have to contend with in the culture of this crop, but we do not suffer so much in Canada in this respect as do cultivators in many other flax growing countries. Vegetation is so much quicker with us, that if the crop is got in in good season, the flax plant comes on so rapidly that it outgrows the weeds, chokes them down, and renders them of such a delicate nature as not to injure the fibre to any extent when prepared for scutching.

It is often asked, Will it do to seed down with flax? This has often been done to great advantage, and some of the most experienced agriculturists prefer it, as they maintain the clover plant is moulded by the pulling of the flax. Those who have not tried it have fears that the young clover plant will be pulled with the flax. This is not the case, however, for, as all farmers are aware, clover has a very long root, and is difficult to pull out of the ground. This is a matter for the agriculturist to experiment on for himself, and settle to his own satisfaction. In Ireland, land is considered best for a flax crop when it has been many years either in meadow or grass. It is usual, after breaking up, first to take off a crop of oats, and then sow flax. This will be found to answer well in this country, but it must not be forgotten that flax must not be sown the same year land has been heavily manured. After turnips, potatoes, or any root crop, the best crop of flax is likely to be had; or when a crop of fall wheat has been killed by the frost early in the spring, with careful cultivation, if the land is clean, a good crop of flax may be expected.

Before leaving this part of the subject, I would venture a suggestion from a fact that came under my notice last year. While passing a field of Mr. Howland's, near Dundas street, which had been sown with turnips, I observed that the crop looked remarkably well, except about two acres which had been so completely destroyed by the army worm, that not a leaf was to be seen. This was about the latter end of June or beginning of July. It occurred to me whether a crop of flax could not be had on this ground. It might be worth a trial in such cases. If a crop of fibre could not be had, half a crop of seed might be obtained. As flax only requires from eighty to ninety days in the ground to come to perfection, it might be worth a trial under such circumstances.

We now come to the pulling, the great bugbear with most of the farmers. I only wish some of our ingenious young Canadians would put themselves to work, and invent an implement that would get me over this difficulty, and the farmers too. And yet it is not so bad, especially if the younger branches of the family could be enlisted to take their share of this part of the



labour. This might be encouraged by giving them a direct interest in the share of the crop. In the German settlements a great deal of this part of the labour is done by the daughters of the farmers, and in a short time they become more expert at it than men at high wages. Four hands are allowed to pull an acre per diem, and at the worst it will only cost three dollars more than cutting an acre of wheat. Whether it be pulled by men or boys, great care should be taken to keep the root ends as even as possible, and in every case when it is pulled before the seed is ripe, which is invariably the rule in Ireland, in order to procure the best quality of fibre. It should be taken immediately after pulling and put into the cesspool or vat, when it is intended to be steeped. This is however seldom done in Canada, dew-retting being the method usually adopted. When flax is allowed to stand in the stook with the seed on, it is necessary to turn the beets or sheaves, to prevent the action of the sun from injuring the fibre.

Both dew-retting and steeping have been carried on successfully here. The Messrs. Perine Bros. and Co., who have done so much in the County of Waterloo, have followed the dew-retting system exclusively, and in almost every instance the farmers themselves have undertaken to do this part of the labour, after taking the seed off which is done by a ripple. This is an implement simple in itself and can be made by any handy blacksmith. It consists of a row of iron teeth screwed into a block of wood; the teeth require to be about 18 inches long, tapering to a point at the top, and placed about 3-16 of an inch apart at the bottom.

The straw or fibre is then carted to a meadow or grass field, spread abroad as evenly as possible, allowed to remain for about eight days, then turned over once, when at the end of other six or eight days, according to the weather, it is ready to lift. This is known by rubbing a few stalks of the fibre together between your fingers, and when the boon, or woody part, leaves the fibre freely, it is ready to lift.

Should the party have water convenient, and follow the steeping process, the same course must be pursued after taking the seed off as in the case of dew-retting; i. e., the flax should

be taken immediately to the cesspool or vats prepared for steeping. Vats are in common use at Norval Mills in the County of Halton. More depends on a proper knowledge of this particular process, than on any other part of the treatment of the fibre.

First, it is necessary, if possible, to have soft river water, free from the influence of any mineral bed. If it be spring water, this may be brought to a proper temperature by running it into the vats or cesspool several days or weeks before you require to put the flax into the water. In Ireland I have known parties to have the water dammed up for three or four weeks for this purpose. In this country less time will do, the action of the sun being so much more powerful. In putting the beets or sheaves into the vats, each one should be laid with the root ends in a line with the band of the other, after laying the first row in the bottom at an angle, say of forty-five degrees. The time for steeping in this state varies from eight to ten days according to the season of the year, but generally from eight to nine days will be found to answer, although I have known it ready in five days, when put in the water during the hottest season of the year. It is as well to begin to examine after it has been in the water that length of time. Great care must be taken to have it brought to a proper focus to yield the most profitable article for market. This is known by rubbing a few stalks between your fingers, as already directed for testing it on the grass. When the woody part becomes sufficiently retted, and leaves the fibre freely, it is ready to take out. Great care is required here, and no little judgment, as so much depends on the state it is in when removed from the water to secure a fine quality of fibre. It is preferable to take it out rather before it is quite ready, than allow it to be too much retted, as you can remedy the first evil by allowing it a little longer time on the grass, while if you allow it too long in the water, a heavy loss will be occasioned in waste. I have known parties of long experience visit the cesspools *three or four times in one day*, when it arrives at that stage at which a few hours may make a vast difference. Some may say, "Well, this is a great trouble." But it is a well known fact, that with care and skill, more par-

ticularly while the flax is undergoing this particular process, one man will produce an article of fibre worth a hundred pounds per ton, while another with flax equally good when taken out of the field, will not get over fifty; hence the necessity for being particular in this stage of the proceedings. In Belgium, flax is often steeped twice; first it goes through the regular process already described, and after it has been dried, put into a stack, and allowed to remain for months, it is taken down and watered again. Of course it is allowed to remain a much shorter time than during the first watering. The consequence is, an article is produced worth from 150 to 200 guineas per ton in the scutched state, and large quantities are exported to Ireland, where it is used for the finest cambrics; while in France, it is worked into almost every description of silk goods. Let us, therefore, in Canada, endeavour to give it sufficient attention to make it pay. On the cheapest and simplest plan we can follow, this will only require a small outlay of time at the hands of the farmer, and he will become familiar with the process in a season or two. The grassing will require to be attended to in the same manner as in the case of dew retting; but in few instances it requires to be turned, unless the flax may have been removed from the water before it was ready. In such case, it will be all the better for being once turned over. When ready for lifting, which is generally about the seventh or eighth day, the stalks are examined in the way already mentioned, viz., by rubbing the boon out. A little experience will enable the cultivator to ascertain the proper time for lifting off the grass. This is easily done by gathering it up into bundles and placing it in piles in the field, where it may be allowed to remain a day or two, in order that all dampness may be removed before putting it into the barn or stacks, as the case may be. Here a word of advice will be most opportune. Some may have grown flax where a mill is not in reach to have it scutched, and not knowing what to do with the straw, have perhaps thrown it out in the barn yard, or made use of it for bedding their cattle. This should not be done, as the party will find by putting it away and keeping it dry, he will in the course of a short time have a ready market for it. He has this consolation in

the mean time, that the longer it remains in this state the more valuable it becomes. In many flax growing countries, such as Courtrai, Holland, &c., the straw is kept over from one to two years before it is manufactured. Throughout the whole of this process, from the pulling to the preparation for the scutcher, the point we have now arrived at,—it should be especially recollected when we complain that wages are high and labour scarce in this country at this season of the year, that in every stage the work is light and may be done by the younger members of a family. Suppose the head of a family offers a direct benefit from the proceeds of the crop when brought to market, depend on it he will soon enlist those advanced far enough in years to make themselves useful. In fact, in Ireland all this work is carried on by females, young boys, and girls, and is more suited to this class than those of riper years, there being a good deal of stooping attending it, especially in spreading and litting off the grass. Since the cost of pulling seems to be such an obstacle, let us make the comparison between the cost of pulling an acre of flax and cutting an acre of wheat. Say an acre of wheat will cost \$1, four hands, at 3s. 9d. per day each, will readily pull an acre of flax in a day. We will take credit for the difference in weight between a bushel of wheat and a bushel of flax-seed, which is 4lbs, and at \$1.50 per bushel, would amount to about \$1.40. This deducted from \$3, will leave only \$1.60 more for pulling an acre of flax than cutting an acre of wheat. Now let us compare the produce of an acre of each. Say the average quantity of wheat is 15 bushels,—which it is to be regretted has not been always reached of late years,—and put the price at \$1 per bushel. This will give us \$15. Put the average quantity of flax-seed at 10 bushels, *two bushels less than the average stated by Messrs. Perine Bros. & Co. in The Canada Farmer, 15 Jan., 1864.* Call the price \$1.50 per bushel, and we have the same result as from the 15 bushels of wheat. The labour in either case will be about equal, as fall wheat requires two seasons to produce a crop when fallowing is necessary. Flax is a spring crop, put in and taken off in the short space of 70 or 80 days. Taking so much for granted, it will be seen that whatever is gained from

the fibre will be net profit to the farmer; and while he gets 10 bushels of seed, he may safely reckon on 300 lbs. of clean scutched flax, worth, at present prices, from \$6 to \$8 per 100 lbs; but assuming it to be only worth \$5, there will be \$15 profit over wheat. Some argue that hay will produce more than a crop of flax; then I say, grow hay by all means. Others say barley will produce more; but they must not forget that, should the abrogation of the Reciprocity Treaty take place, the price of this grain may be seriously affected. Another consideration presents itself in connection with this crop. Should Mr. Dunkin's Bill become the law of the land, as it has already in the County of Halton and other parts of the country, may not the price of barley become seriously affected by it as well as by the abrogation of the Reciprocity Treaty, in case that measure should be carried out by the American Congress? I do hope the Treaty may continue in force, but it is well to be prepared for all contingencies. Taking this view of the subject, the cultivation of the flax plant commends itself strongly to the notice of the promoters of the temperance cause, for neither fibre nor seed can be converted into any kind of intoxicating drinks. Linseed oil is extracted from the seed; while an article of food for cattle is also produced in the shape of oil-cake.

The fibre can be converted into a hundred different kinds of the most useful descriptions of goods in common use in the country, and of which we are large consumers ourselves, such as coarse linen of every description, brown hollands, bed-tick, linen drills, shoe threads, counter twines, whipcord, plough lines, bed-cords, ropes, coarse twines, in fact, cordage of every kind. On all such goods we are paying a duty of twenty per cent., which will be saved; while at the same time a new field of industry is thrown open where artisans and labourers will find ready employment.

The success of the Messrs. Perine Bros. & Co., of Doon, and Col. Mitchell, of Norval, with others engaged in this new and valuable branch of Canadian industry, furnishes evidence sufficient to satisfy the most incredulous mind that this is one of the finest countries in the world to commence operations of this kind. The Messrs. Perine commenced only a few years ago with



a few acres which they induced the farmers to grow for them, by offering the seed for sowing in the spring, and promising they would have a mill in operation in the fall of the same year, which would enable them to purchase from the farmers both seed and fibre. Since then it is well known they have largely increased their operations, and are at the present time carrying on no less than eight scutching mills in the County of Waterloo, in addition to a large linen manufactory, for which they deserve all credit. At Norval, Col. Mitchell, although not so extensively engaged, and carrying the business on a somewhat different principle, has invested largely in vats for steeping purposes, and is at this moment getting in machinery for spinning and weaving. It is very desirable for parties interested in the welfare of this country to visit either or both of these establishments. What has been done in the Counties of Waterloo and Halton can be done elsewhere, and there need be no apprehension, for years to come, that we are going to produce more than we will consume. The articles produced are all staple goods, and in constant use. Our neighbours on the other side of the lines are alive to this new project. Only two years ago the Government offered the handsome sum of \$20,000 for the encouragement of the cultivation of flax in a single State. The Messrs. Barber Bro. & Co., of Lisburn, in the North of Ireland, known to be the largest linen thread manufacturers in the world, perhaps, are erecting a manufactory at a place called Patterson, nearly opposite New York, at a cost of some fifty or sixty thousand pounds sterling, for the purpose of commencing operations of a similar character with their present establishment at Lisburn, only on a smaller scale. There is no good reason why we should not have capitalists coming into this country to make similar investments, as we have inexhaustible water-power, climate and soil equal to any in the world, and a ready market at our own door for all the coarser descriptions of goods. Some will argue that labour is too scarce and dear in this country to carry on manufacturing operations successfully. When we take into consideration the price of provisions in Canada; beef and mutton being from 4 to 6 cents per lb., and other things in proportion, so different

from the prices in Europe, where the same commodities cannot be had for even double their cost here,—we perceive that it only needs the sure prospect of employment to lead artisans to emigrate to this country. Moreover, when men are well paid, more work is done, and in Canada every man has an object in view, either to better his position as an artisan, or secure a tract of land for his family, which he seldom fails in doing. Have not our woollen manufactories succeeded remarkably? Where will you find a more prosperous business than is carried on at Streetsville in the woollen manufactory of the Messrs. Barber Bro. & Co., where over one hundred hands are daily employed? Go to the mills of Mr. Hespeler, and there see his extensive works. Such establishments are a credit to Canada, and the enterprise of the parties carrying them on deserves the highest praise. What do we find at the Village of Preston, where the woollen manufactory of Messrs. Elliot and Hunt was unfortunately burned down a short time ago? The best proof that can be adduced in favour of the flax project is shown there. Those parties are erecting a large linen manufactory with some twenty or thirty thousand dollars worth of machinery already laid down. These works will soon be in operation. Here then are parties with all the experience and knowledge of the woollen business at their hands, putting in linen works in preference. Look at those and other numerous woollen establishments carried on at present in the country; behold the success and prosperity that have attended these parties. Surely we may safely embark in the linen business without any apprehension. It is worthy of note that the one will prove of great advantage as a feeder to the other. At the present time the Messrs. Barber Bro. & Co., of Streetsville, are using large quantities of yarns from the linen mills of the Messrs. Perine Bros. & Co., Doon, for warp and filling with woollen weft, thus producing a much stronger article for wear than can be manufactured with cotton and woollens. Hence our linen manufacturers have no more ground to fear want of demand than our woollen manufacturers. Some apprehension is felt at the probable state of things after the American war is over. Cotton, it is urged, will again become cheap. But there are few who are prepared to admit

that cotton will ever recede to former low prices, as it is likely it will be subject to a heavy duty along with all other commodities, to help to make up the war taxes. Meantime, I have no doubt our manufactures will have arrived at a stage of improvement in producing a quality of linen goods that will be less expensive and more durable than articles made from cotton. In Ireland, when the American war broke out, it was supposed the linen trade was ruined, from the loss of their customers in the Southern States. But not six months afterwards, a market sprang up in France that fully compensated for this temporary drawback, and qualities of goods have since been introduced into that market, that will never be superseded by cotton.

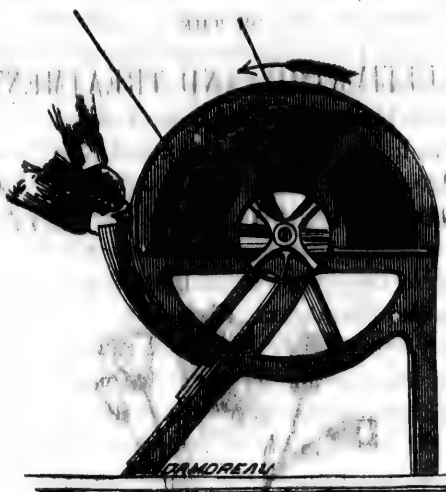
The progress of flax culture in Ireland, and the present prosperous state of the manufactures there, is a strong inducement to parties to embark in it in Canada. First of all the farmer in Ireland pays a heavy rent for his land. From one to two and three pounds sterling per acre is paid; and often for lands especially adapted for the growth of flax, I have known as high as eight guineas an acre paid. I may state that I was present when the party paying that amount of rent was offered £30 sterling per acre for his flax on the ground before it was pulled, which he refused, and I learned afterwards he made more of it. The manufacturers too, have often to invest large amounts in leasehold property where the land belongs to some estates gentleman; and frequently at the expiration of such lease an additional rent is exacted, or perhaps the tenant is dispossessed, and loses his improvements altogether. We have no such occurrences to dread in Canada; here, parties own their own lands, have no rents to pay, a mere trifle for taxes, and their improvements remain in their own hands, instead of falling into the hands of other parties.

Apprehensions are entertained by some with respect to flax exhausting the land. On this head I would simply state that most writers on the subject maintain it does not exhaust the soil more than any other crop; nor can I imagine that a crop put into the ground, say in the middle of the month of April or early in May, and taken off about the same time in July, can draw more largely on the land than a crop of wheat which is

put in in the month of September, and not taken off before the month of August following. The one remains in the ground some eleven months, while the other is only in the ground three months, and often less time than that. However, be that as it may, if there is anything like the advantage I have endeavoured to show there is in growing a crop of flax, and it is feared it may exhaust the land somewhat more than any other crop, only add a few more loads of manure to the field you intend for flax the year before, or use a quantity of artificial manure, such as Coe's Superphosphate of Lime, which is so highly recommended as a fertilizer, and your land will lose none of its producing qualities. There are plenty of farmers in the neighbourhood of Norval and in the County of Waterloo, who will tell you that they have sown wheat after flax, and succeeded in getting as good a crop as they would have had after any other crop. As already stated the question is often asked, will flax do to seed down with? This is often done, and that successfully. Before sowing it is necessary to have the ground in good order, as clean as it is possible to get it, and free from all kinds of weeds. This is just the state you are expected to have it in for a crop of flax, when grown by itself. In Ireland, seeding down with flax is often practised, and so it is in this country.

Having endeavoured to put a few of the most important facts before the reader relating to the cultivation of the flax plant, and the mode of handling it after it is matured, I will now offer a few suggestions with respect to the machinery for scutching and preparing the raw material for market. Most of those who have taken an interest in flax matters of late years, are aware that the Government authorized me, while in Ireland recently, to purchase a number of the best scutching-mills to be had, for the purpose of distributing them among the Agricultural Societies in both Upper and Lower Canada. Mr. Rowan's mill being a portable one, and highly recommended in many parts of Ireland, presented itself as likely to produce good results in Canada, the more so as it can be used by unskilled labourers, and the price, which is some \$150 each, being quite within the reach of any farmer to have one for his own use if he desired it. An engraving and description of this mill, together

with some testimonials, taken from Mr. Rowan's circular, may be here introduced.



ROWAN'S NEW PATENT FLAX SCUTCHING MACHINE.

In point of cheapness, efficiency, and economy, this Machine surpasses anything that has yet been produced for cleaning and scutching flax. It is very simple in construction, occupies but a very small space (3ft. 9in. x 3ft. 4in.), and is easily driven and attended. It is worked by two persons, and will clean from 25lbs. to 30lbs. of flax per hour, when properly worked, in a superior manner, and with a great economy of fibre. The extremely low price of this machine brings it within the reach of every one requiring flax scutched.

**DESCRIPTION FOR USE.**—The workman takes a "strick" of flax straw (*without being rolled, or other preparation*), holding it near the root end, and passes it into the openings at the side of the Machine, when it is subjected to the action of the Scutching apparatus. The "strick" is then withdrawn by the opening where it was entered, and the other side turned to the action of the Beaters and re-entered as before. The flax is now partially scutched or "roughed," when two or three pieces are then put together, and again the same operation repeated as before described. When withdrawing the flax from the Machine, let it be drawn slightly end ways; for, by attending to this, the flax is found thoroughly scutched, and with the ends perfectly finished—an advantage over the ordinary system. The operation is remarkably rapid, and there is no risk of accident whatever. The



"boon" falls through the Machine, and the tow, of which very little is made, is collected at the back. The Machinery is so simple that it cannot go out of order, and has been fully tested to the complete satisfaction of competent judges.

The arrow shows the direction in which the Cylinder revolves. The velocity of the Machine to be driven to say—460 revolutions per minute for average quality of straw. If the straw be hard and wiry, then the speed to be a little higher, and if soft, slower. The price of the Machine is only £24, for which sum it will be delivered f.o.b. on any steamer at Belfast, or at any of the railway termini.

The regulating screw in front of Machine is for the purpose of adjusting the breast-plate either wider or closer from the Beaters, to suit the various qualities of Flax.

*The only attention the Machine requires is to keep the Bearings well oiled.*

Orders addressed to JOHN ROWAN & SONS, York Street Foundry, Belfast, will receive attention.

The patentees have great satisfaction in submitting to the trade the following highly satisfactory testimonial from one of the first and most extensive flax-spinning firms in Ireland :—

" SION MILLS, STRABANE, 8th December, 1863.

" Messrs. JOHN ROWAN & SONS, Belfast,

" DEAR SIRS,—In reply to your favour of yesterday, inquiring our opinion as to the relative value of your Improved Scutching Machine, as compared with the Ordinary Machine, for Mill-Scutching Irish Flax, we reply as follows:—We prefer your Machine to any Scutching Machine we have ever seen. The last improvement you have made of entering the flax at the outside of the Machine makes it very valuable, as the worker can see it during the process, and give it as much or as little scutching as may be necessary.

" We have had great experience with the Ordinary Irish Scutching Machine, and we consider that your Machine gives as good a yield, while it does the ends of the flax in a very superior manner. To spinners this is a matter of great importance.

" We get a better yield also at the Hackling Machine from flax scutched by ourselves on your Machine.—Yours truly,

HERDMANS & CO.

" If you wish to publish this, we have no objection.—H. & CO."

The following is from one of the oldest linen merchants in the North of Ireland :—

To the Editor of the "NORTHERN WHIG,"

"DEAR SIR,—I consider that the extreme interest now taken in everything connected with the Flax and Linen Trade of Ireland calls upon me to report to the public, through you, the following important facts :—

"I have both Rowan's Patent Scutching Machine and also the old Handles for Scutching or Dressing Flax at work here, for comparison ; and I have found that, in trying the weight of Flax Straw dressed in both ways, the produce in each case is as follows :—

"28lbs. of flax straw, hard and badly watered, produced 4lbs. scutched by the Handles.

"28lbs. flax straw of the same kind, hard and badly watered, gave 4½lbs. by Rowan's Machine.

"Second—28lbs. of flax straw, good and free, produced 6lbs. 9ozs. by the Handles.

"28lbs. of flax straw, of same good flax, produced 7lbs. by Rowan's Machine.

"This result I have found repeatedly after many trials. Now, I do think that these facts require to be well considered, and that it is only due to let all know that have any interest in the matter, as the saving effected by Rowan's Machine is very important. Besides this, it is a great matter for farmers to have the Machine on their own premises, worked by horse or other power, when they could dress their flax in such times and in such quantities as would answer them, and not only have more produce, but get their work done in their own time.

"Yours truly,

"JAMES FERGUSON.

"NEWFORGE GREEN, BELFAST, January 18, 1864."

The mills purchased by me on behalf of the Government, on arrival here, were distributed in the following order : One at Quebec, one at Montreal, one at Sherbrooke, one at Kingston, one at Toronto, and one at London. Until of late, little use has been made of them, as parties engaged in this business had supplied themselves with the ordinary kind. Of the utility of those mills I have no doubt. There is every reason to believe they are calculated to do good work. I saw them tried several times in Ireland, and was present at the Sion Mills with several other parties when Mr. Herdman certified to their qualities as compared with other mills. Being portable and

capable of being worked by the horse-power of the threshing machine, and not requiring rollers to break the flax, they are worthy of a fair trial. This, I fear, they have never had as yet in this country. Hemp was dressed on one of them at Kingston the year before last, and it was found they answered admirably for that purpose.

To return to the quality of lands best suited for flax, it will be found that on the fine, rich, flat lands in the Canada Company's Huron Tract, and lands of a similar nature in the Counties of Kent, Essex and Lambton, as well as the St. Clair Flats, flax may be raised to any extent. Lands that have been cleared a few years will also give good flax.

It will be observed that in all the calculations made in these pages I have only shown the prices for the common or ordinary qualities of scutched flax. But it must not be forgotten that, with proper attention, and the exercise of a skill which it is not difficult to attain, it is quite within our reach to produce an article of fibre worth at least fifty per cent. more than that which we are producing at the present time. Hence there is great inducement for the farmer to give it every attention in his power. No doubt many will soon fall into the method of cultivation carried on in Ireland, i. e., pulling before the seed is ripe, by which means a finer and more flexible article of fibre is obtained, in consequence of the oily substance in the stalk not being exhausted in the seed when allowed to ripen. By using a little extra attention and skill in the preparation of flax after pulling, an increase of many dollars in value may easily be secured.

Before closing, I would suggest the desirableness of every Agricultural Society throughout the Province offering liberal prizes for flax-growing in their lists for the autumn; such prizes to be distributed as may seem best calculated to encourage the production of this crop. County Councils, if it be within their province, could not do a more praiseworthy act than make a moderate appropriation for the same purpose. The parties competing for such prizes set the example to others, and hence a spirit of emulation is set on foot, as in all other branches of

agriculture, and we would not only have much larger quantities produced, but better qualities.

It is also desirable that companies should be formed, as it is quite within the reach of a few individuals, with a very moderate amount of capital—say \$1,000—to start a scutch mill with eight or ten stocks, and after preparing their own flax for market, a profitable business could be done in scutching for others.

What we require most of all is persons of capital and enterprise to give this matter their attention in cities and towns. In Toronto, within the last few months, a Company has been formed to erect and start an oil mill, which, I understand, is doing a most successful business. Another Company has been formed for the re-erection of the Rossin House. These are examples of what combined effort can accomplish. With such inducements as the manufacturing of linen presents, it is only a wonder the project has been allowed to remain unnoticed so long. Some may urge that water-power is required for such extensive works. There are, however, several small streams in the vicinity able to supply an engine that would drive any amount of machinery. If buildings were placed near the Lake, sufficient water could easily be made available for that purpose. Another great advantage in connection with the use of steam in flax manufacture, is that sufficient fuel is made from the shive, or refuse taken from the fibre, to supply an engine of any capacity, with, perhaps, a trifling quantity of wood added.

On a recent visit to New York, I found our American neighbours quite alive to this new enterprise. They are entering with much spirit both into the cultivation of the plant and its manufacture. At Paterson, New Jersey, three large establishments are already at work, and some six or seven hundred hands are employed. The most extensive of the three has been in operation several years in the manufacture of *jute*, and the proprietors are now preparing to spin and weave flax and tow, which will create a demand for the raw material. At Schenectady there are also several mills at work. Here our Canadian flax has found a ready market. At one of these

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establishments a large quantity of coarse twine for tying brooms is manufactured, as the principal crop grown on the valleys of the Mohawk is broom corn. There is no reason why this crop should not be successfully grown in Canada, and, from the demand for the article, it is well worthy the attention of the Canadian farmer.

While urging the growth of the flax plant, too much cannot be said in favour of starting manufactories, as it is an acknowledged fact that, from the failure of the wheat crop for so many years in succession, farming lands, and property of every description in the country, has greatly depreciated. Hence the greater necessity for every one interested putting his shoulder to the wheel and helping on this important movement. Wherever Companies can be started with any prospect of success, parties should not hesitate in taking stock and encouraging the project in every possible way. Large Companies ought to be organized in the large cities and towns, while others, on a smaller scale, can, with perfect safety, be established in the country. It is to be hoped capitalists in the Old Country, with experience, will soon find their way to Canada and join those who have water-power and buildings, which they would readily turn in as so much stock, and, with combined effort, success would undoubtedly be achieved.

*The cottonizing of flax* is strongly recommended. Only the other day a party from Detroit sent me a sample, stating that his mill will make about 1,500 lbs. per day from *flax tow*. This is a most important feature in the case, as it proves that the very roughest and coarsest part of the flax can be turned to good account, and although parties may embark in this new project with comparatively little knowledge, by degrees they will arrive at a point that will give them complete control of their business and be most profitable. In all cases, it is best to commence with the coarser qualities of goods, and not on too extensive a scale. The great demand for seed for sowing this spring is sufficient proof that farmers are determined to give this new crop a fair trial. Those who have not engaged the quantities they require, will act wisely to do so before the season advances too far. When we speak of 40,000 or 50,000



acres as likely to be sown this year, we must not forget that this area will not be much more than the arable land in a single township. If there were only two acres sown on each 100 acres in every township in the Province, what a vast quantity we might look for! Every farmer is perfectly safe in putting in from two to five acres at least. More than this, I do not hesitate to say he stands in his own light if he does not grow at least a small quantity of this promising product.

In conclusion, I most respectfully invite parties interested in the growth and manufacture of flax, to visit the Emigration Office, No. 14, Front Street, Toronto, where they may examine samples of flax in all its various grades from the seed to the manufactured goods ready for consumption. I feel confident in stating that this will become in a very few years one of the leading staple crops of the country, and I sincerely wish all parties who may embark either in its culture or manufacture, every success.

JOHN A. DONALDSON.

## A WORD ON EMIGRATION.

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While every inducement is held out to encourage emigrants coming to this country, the hands of every agent in connection with the Emigration department would be strengthened by the co-operation of the County and Township Councils. These might lend a helping hand in finding ready employment for the emigrant on his arrival here. It is to be hoped public works may soon spring up that will afford employment to the labouring classes likely to set foot on our shores this coming spring. The construction of the Georgian Bay Canal, or the enlargement of the Canals already built, the opening up of roads through the recently surveyed Townships, and the erection of new manufactories, would be of immense value to this country.

Parties requiring servants, either male or female, farmers requiring labourers, or mechanics requiring hands, will do well to apply at the Emigration Office either personally or by letter. Those who have farms or lands for sale, will please send in lists of them with full description and prices affixed, so that parties arriving here can learn without loss of time where they may be able to purchase such properties as are best suited to the capital they have brought with them.

J. A. DONALDSON,

*Government Emigration Agent.*

Toronto, 10th March, 1865.

EMIGRATION OFFICE, 14 *Front Street.*

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IMPORTANT TO FARMERS.

## COE'S SUPER-PHOSPHATE OF LIME.

A SUPERIOR PREPARATION OF GRUND BONES.

### A STANDARD MANURE FOR ALL FIELD AND GARDEN CROPS.

PATENTED 3rd DECEMBER, 1863.

It matures Crops from Ten to Twenty days earlier, and greatly increases the yield.

Lands exhausted by long cultivation are made productive by the use of this Super-Phosphate. It supplies to the soil those substances that are taken out by cropping. It is in fact PLANT FOOD, and when it is used the land continues to improve each year, and to require a less quantity to produce the same amount of results. And the GRAIN, or VEGETABLES, or FRUIT produced are of superior quality. When used on pastures, the cattle will feed where it is applied in preference. The milk of cows that feed upon this grass is much richer, and will yield, in some cases, fifty per cent. more butter.

It gives WHEAT a firmer stalk, so that it is not liable to lodge before ripening; produces a large head and plump kernel; and is rarely affected by either rust or mildew. RYE, BARLEY or OATS are equally benefitted.

It gives CORN and PEAS a dark green color, and a vigorous growth, and causes them to ripen at least ten days earlier.

It quickens the growth of TURNIPS, keeps away the fly, and the increase of yield is remarkable. The same is true with CARROTS, BEETS, and other Root Crops.

It keeps away the maggots from ONIONS, and has produced a yield as high as 800 bushels per acre.

To TOBACCO the Phosphate gives a vigorous growth, a large, well-developed leaf, and protects it from the worm.

It improves the quality of the Fruit of GRAPE VINES and FRUIT TREES; also of STRAWBERRIES, and other Horticultural Fruits.

Its effects upon FLOWERS and upon LAWNS surpass that of any other fertilizer.

It was AWARDED THE FIRST PRIZE for ARTIFICIAL MANURE at the Provincial Exhibition in Kingston in September, 1863, and at Hamilton, in September, 1864.

The Proprietor attends personally to its manufacture, and he assures the Public that they may rely upon its quality being maintained.

PRICE \$50 per ton, in barrels of about 200 lbs. each.  
It is also put up in One Dollar packages for retail.

Any dealer or consumer wishing for further information will please address a letter to either

ANDREW COE,  
Proprietor, Montreal.

or

E. L. SNOW,  
General Agent, Montreal.

# CANADIAN TESTIMONIALS.

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FROM HENRY CROFT,

*Professor of Chemistry in University College, Toronto, and Chemist to the Board of Agriculture of Upper Canada. In reporting an analysis which he made of the Super-Phosphate in September, 1863, remarks:*

"The manure—containing in the insoluble portion, Phosphate and Sulphate of Lime—and in the soluble portion, so large a proportion of the Salts of Ammonia, in such a form as to be readily assimilated by the plants;—must be a *very valuable substitute for Guano or other Manure.*"

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FROM COL. E. W. THOMSON,

YORK TOWNSHIP, 29th September, 1863.

DEAR SIR,—In the Spring of this year I procured two barrels of your fertilizer and applied it to two acres of Chinese Millet: the result was a *very fine crop*. I was so much pleased with it that I have manured a field of Fall Wheat with it, at the rate of 200 lbs. or thereabouts per acre.

Yours, &c.,

E. W. THOMSON,

*President of the Board of Agriculture, U. C.*

MR. A. COE, Montreal.

N. B.—The two acres of Chinese Millet above alluded to yielded about *three tons per acre*.

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*Letter from Mr. Wm. Whittlaw, one of the best farmers of Guelph, Wellington County, C. W.*

GUELPH, C. W., Dec. 7, 1864.

GENTLEMEN,—In reply to your enquiries as to my experience with Coe's Super-Phosphate, I have to state as follows:—I had a field of ten acres, which was manured—with the exception of one acre—at the rate of 12 loads of farm-yard manure per acre. On this acre I applied 300 lbs. of Phosphate, and no other manure. At the gathering of the crop, it yielded 100 bushels *more* than any other acre of the field: the whole yield being 5,400 bushels. The Phosphated acre appeared the best through the season, and, what was very singular, an army worm, which appeared in the fall and devoured the leaves of the Turnips extensively on the field, scarcely touched the acre that had Phosphate.

I tried a little on Spring Wheat. It did well, but I kept no account of the difference.

I am entirely satisfied with the Phosphate, and shall use it more extensively in the future.

Yours truly,

WILLIAM WHITLAW.

To. MESSRS. JAS. MASSIE & Co., Guelph.

*Statement for 10 Acres, according to above experiment.*

WITH FARM-YARD MANURE ALONE.

10 acres, 120 loads, say \$120, yield 5,300 bushels.

WITH PHOSPHATE ALONE.

10 acres, 3,000 lbs., \$50 per ton, \$75, freight say \$6;—\$81, yield 6,300 bushels.

It is better to apply the Phosphate *with* farm-yard manure. In this case, had the 120 loads and the 3,000 lbs. been all applied together, the crop would probably have exceeded 8,000 bushels.



# EXHIBIT TESTIMONIALS

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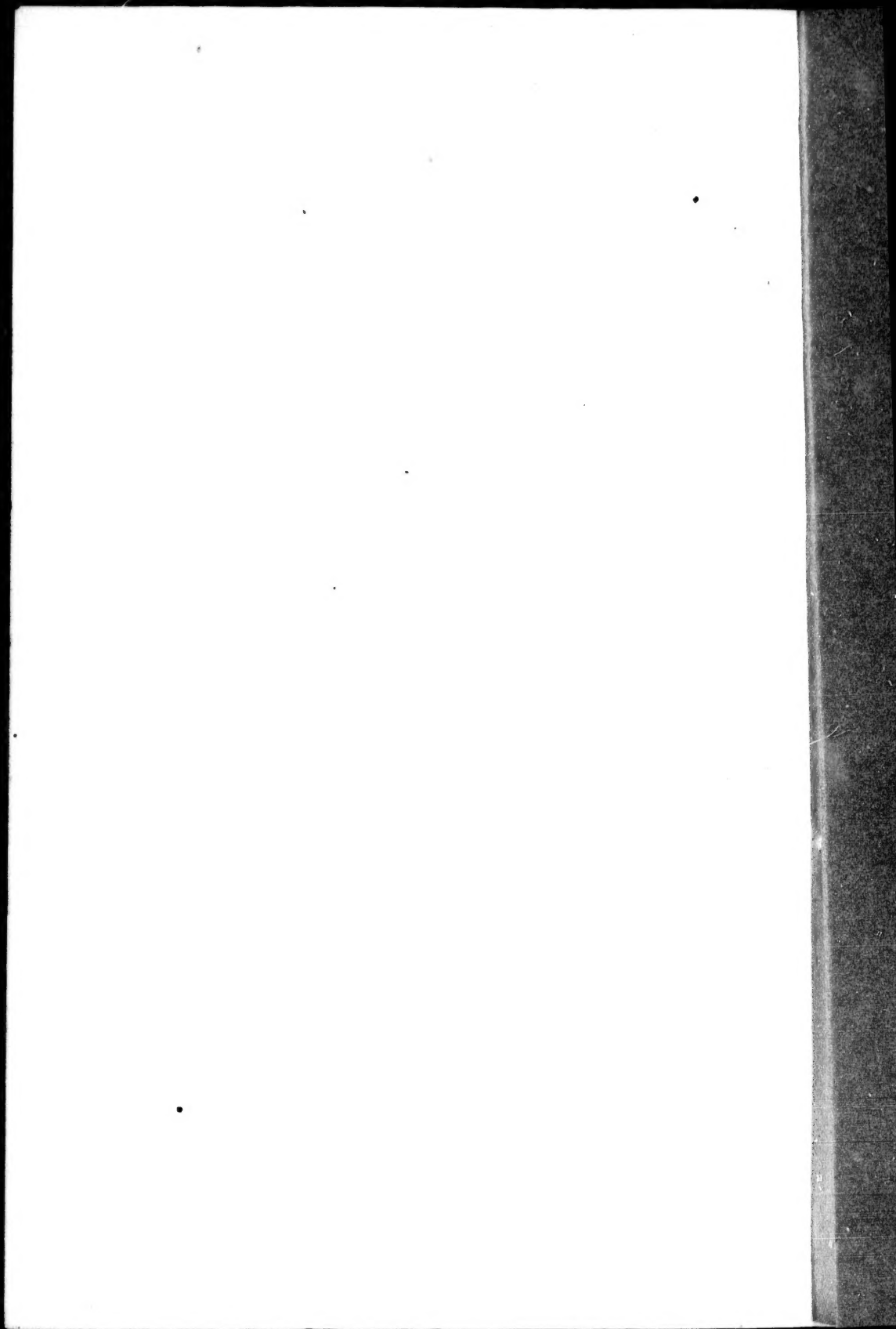
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**GOOD FARMING LAND**  
FOR  
**ONE DOLLAR PER ACRE.**

**THE CANADIAN LAND AND EMIGRATION COMPANY,**  
**OF LONDON, ENGLAND,**  
(*Capital, £250,000 Stg.*)

**Offer for Sale or Lease their Lands in the Township of Dysart,  
in the County of Peterboro', on the following terms :**

**TOWNSHIP OF DYSAART.**—Farm Lots can be purchased at \$1 per acre, cash down, or rented for a term of ten years at an annual rental at the rate of \$10 50 per 100 acres, payable in advance, with the right of pre-emption at the rate of \$1 50 per acre.

**TOWN PLOT OF HALIBURTON.**—Town Lots, chiefly half-acres, can be purchased at prices ranging at present from \$40 to \$70, either cash, or half cash and the balance in one year at eight per cent.

The Township of Dysart is one of a block of nine townships, the property of the Company, situate immediately to the east of Minden. It is composed of excellent farming land. The timber is principally hardwood, with sufficient pine for local purposes. The scenery is picturesque, and the air healthy and invigorating.

Access is obtained by the Bobcaygeon Road, connecting with the road to Haliburton a little below Minden. A direct road from Peterboro' to Haliburton is, however, in process of construction, and a road from Lindsay will, it is anticipated, shortly be opened up.

During the past year the settlement has made very rapid progress. A Saw Mill, Blacksmith's Shop and Church, have been erected ; a Post Office has been established, and a Boarding-house and Stores have been opened for the accommodation of intending and actual settlers, all in or near Haliburton, situated in the centre of the township, on the banks of the beautiful Lake Knapog.

In the western portion of the township, the Company and settlers combined, are erecting a School-house, and a teacher will be engaged this spring, when a School will also be opened at Haliburton. It is expected that a clergyman will reside at Haliburton before the summer.

In order to meet the wishes of many enquirers for Land, the Company are now clearing and fencing a few acres on certain Lots and erecting good Log Houses. These farms will also be sold at a very cheap rate.

For further information apply to

**C. J. BLOMFIELD,**

*Secretary, Toronto Bank Buildings,  
TORONTO,*

Or to **CHAS. R. STEWART,**

*HALIBURTON, CO. PETERBORO',  
Resident Agent of the Company.*

TORONTO, March, 1865.